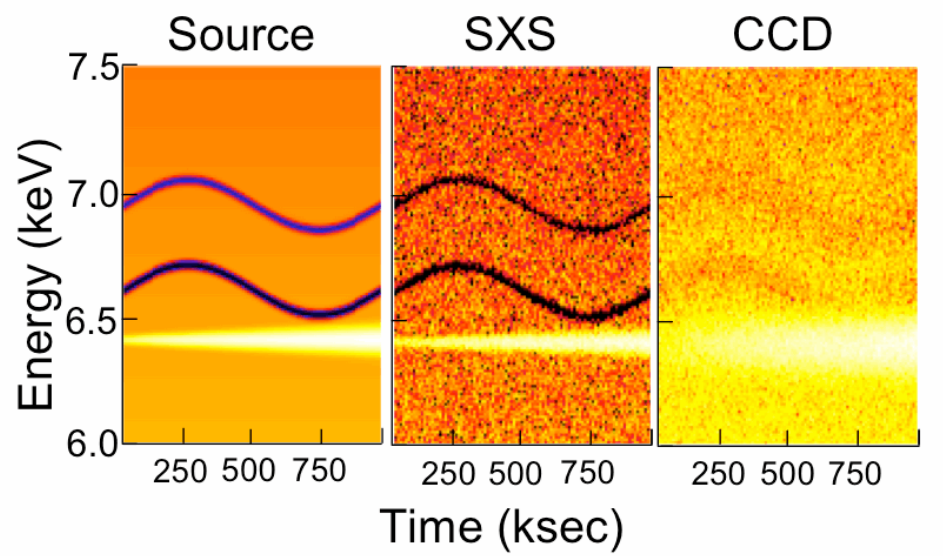
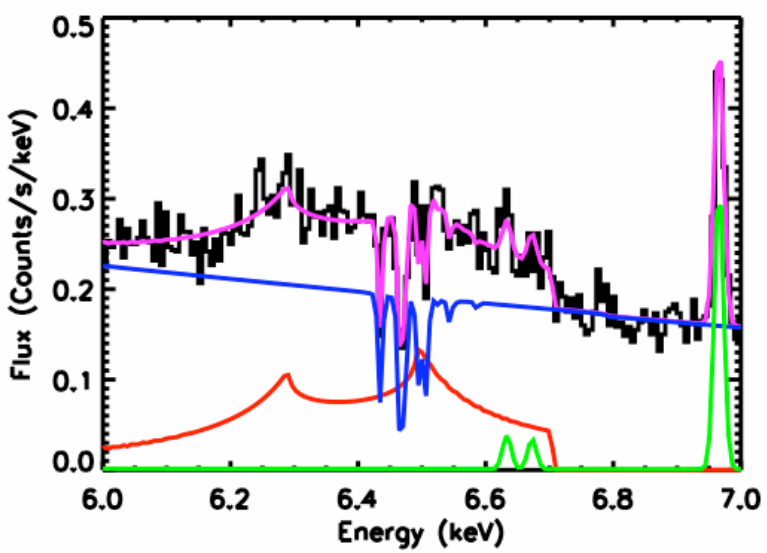
# Astro-H/SXS observations of Active Galactic Nuclei




The source shown here on the left contains two slowly varying sinsusoidal absorption features and an Fe K line that becomes increasingly strong and broad. **The SXS (middle panel) will measure velocity structures of 100 km/s on the 10 ksec orbital timescale of a 30 million solar-mass super-massive black hole, which cannot be seen with CCDs (right panel).**

SXS can resolve the 2000 km/s FeK emission line in NGC 3783 and measure the ionization parameter, redshift, and optical depth of the Fe K absorption lines. The spectrum shown (black) is a 100 ksec simulation using parameters from Reeves et al. (2007). The models are the Fe K emission (green), absorption (blue) and photo-ionized emission from the warm absorber region (red).
**SXS will measure both the velocity and width of the absorption features to better than 400 km/s.**